

## **FACT SHEET**

### **FINAL RULE SETTING THE STANDARDS OF PERFORMANCE FOR STATIONARY COMBUSTION TURBINES**

#### **ACTION**

- On February 9, 2006, the Environmental Protection Agency (EPA) finalized a rule that will reduce emissions of air pollutants from new stationary combustion turbines.
- The final rule requirements will apply to new turbines with a peak rated heat input greater than or equal to 10 million British thermal units per hour. These turbines generate electricity and are used at facilities such as power plants, pipeline compressor stations, and chemical and manufacturing plants.
- The final rule sets emission limits for oxides of nitrogen (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) for stationary combustion turbines that are more consistent with the performance and lower emissions of today's stationary combustion turbines. When compared to the current standards set in 1979, the new standards tighten emission limits for NO<sub>x</sub> by over 80 percent and emissions for SO<sub>2</sub> by over 90 percent.
- New, modified, and reconstructed turbines will have to comply with the final rule. EPA estimates that approximately 355 new stationary combustion turbines will be installed in the United States over the next 5 years and will be affected by the final rule.
- The final rule allows new turbines to comply with either a concentration-based NO<sub>x</sub> limit in parts per million or an output-based limit in pounds per mega watt-hour. The standards vary slightly due to turbine size, fuel-type and geographic location.
- The final standard for SO<sub>2</sub> is the same for all turbines, regardless of size and fuel type. The fuel sulfur content limit for continental areas is based on the sulfur content of low sulfur diesel. The fuel sulfur content limit for non-continental areas is based on the sulfur content of diesel fuel produced in non-continental refineries.
- EPA expects that most owners or operators of new turbines will be able to comply with the NO<sub>x</sub> limit without installing add-on emissions controls. Most new turbines already utilize lean premix technology, which has inherently low NO<sub>x</sub> emissions. A few turbines may need to install a selective catalytic reduction control device to meet the NO<sub>x</sub> limit.
- EPA expects that all owners and operators of new turbines will comply with the option of demonstrating low sulfur content of their fuels rather than stack testing for SO<sub>2</sub>. Fuel oil and pipeline natural gas contain low levels of sulfur and are widely available.

#### **HEALTH/ENVIRONMENTAL BENEFITS**

- The final rule will provide improvements in protecting human health and the environment by reducing pollutant emissions. EPA estimates that the total pollutant reductions will be over

830 tons per year of criteria pollutants in the 5<sup>th</sup> year after the rule is final.

- An output-based standard relates the emissions to the productive output of the process; in this case, pounds of emissions are related to the power output, or mega watt-hour. The output-based standards in the final rule will allow owners and operators the flexibility to meet their emission limit targets by increasing the efficiency of their turbines. The use of more efficient technologies reduces fossil fuel use, and reduces environmental impacts associated with the production and use of fossil fuels.
- Pollutants such as NO<sub>x</sub> and SO<sub>2</sub>, can cause both temporary and long-term respiratory symptoms, such as shortness of breath, changes in airway responsiveness, and increased susceptibility to respiratory infection.
- Nitrogen oxides can react in the air to form ground-level ozone. Ozone can cause coughing, shortness of breath, and aggravate asthma, and other chronic lung diseases such as emphysema and bronchitis. Ozone can lead to reduced lung function in both children and adults.
- NO<sub>x</sub> and SO<sub>2</sub> also can form fine particulate pollution. Exposure to fine particle pollution is associated with significant adverse health effects including shortness of breath, bronchitis, asthma attacks, heart attacks and premature death.
- Both NO<sub>x</sub> and SO<sub>2</sub> are major precursors to acid rain, which, when deposited, is associated with acidification of soil and surface water.

## **COST**

- EPA estimates the total nationwide annual costs for the final rule to be \$3.4 million at full implementation.

## **BACKGROUND**

- The Clean Air Act requires EPA to promulgate and periodically revise the NSPS, taking into consideration control technologies available and costs of control. EPA originally promulgated the NSPS for stationary gas turbines in 1979, and no changes to the emissions limits have occurred since then.
- Since 1979, technological advances have led to improvements in:  
nitrogen oxide emissions control devices,  
emissions monitoring devices,  
emissions test methods,  
combustion efficiency and turbine design, and  
the composition of fuels used for gas turbines.

- The final rule reflects the performance and emissions of today's new stationary combustion turbines without the use of add-on controls.

#### **FOR MORE INFORMATION**

- To download the final rule from EPA's web site, go to "Recent Actions" at the following address: <http://www.epa.gov/ttn/oarpg>.
- For further information about the final rule, contact Mr. Christian Fellner at EPA's Office of Air Quality Planning and Standards at 919-541-4003.
- For other combustion-related regulations, visit EPA's Combustion Related Rules page at: <http://www.epa.gov/ttn/combust/list.html>.